WOODStore.net

Browse more than 1,300 woodworking project plans, DVDs, back-issue collections, videos, tool reviews, books, & more!

Thank You!

Adobe Acrobat Reader Troubleshooting Guide

My printer won't print the text correctly

Patterns are not printing full-size

I can't find my file now that it's downloaded

woodmagazine.com/adobe

WOOD Store

Customer Favorites

Shop Tools & Accessories

Indoor Furniture

Outdoor Furniture

Mission Furniture

Visit the WOOD Store at:

WOODStore.net

tabletop treasure box

Beautiful wood, an elegant design, and your choice of corner joinery make this project the perfect gift.

A divider made of the same wood species as the lid divides the box interior.

An artful break from regular finger joints, the alternating-width finger joints featured in this design add interest to the corners. You might also consider alternating-width dovetails in place of the finger joints. A small project like this provides an opportunity to learn how to hand-cut dovetails. See how on *page 64*.

To make it easy to build a box just like the one shown *above* (mahogany box, bamboo and divider, and wenge handle and feet), we provide a mail-order wood kit (see **Sources**). You also can use those odd pieces of figured wood you've stashed away. Just pick out a contrasting species to set apart the box, lid, and handle. For instance, make the ends and sides from cherry, the lid and divider from maple, and the handle and feet from walnut.

First build the box

1 Plane stock to ›" thick and cut the ends (A) and sides (B) to the sizes listed in the **Materials List**. (We used mahogany.) To make your box with hand-cut dovetail corners, see *page 64*. Then skip to **Step 4** in this section. You also can make your box with alternating-width finger joints that mimic the spacing of the dovetails by following the next two steps.

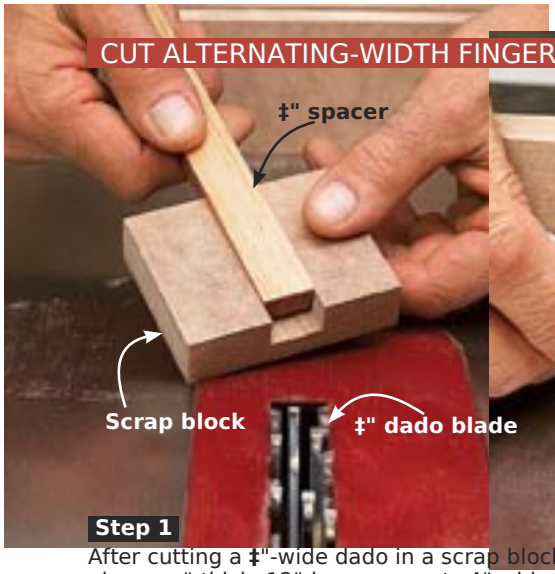
2 To set up your tablesaw to cut the finger joints shown in **Drawings 1** and **2**, first install a ‡" dado blade and cut a test dado in a piece of scrap. (Do not use any shims, just the two outside blades and four chippers.) Switch to a ‹" dado (with shims) and cut another test dado. Then cut two ‹"-thick, 12"-long pieces of scrap and make spacers by planing one to fit snugly in the ‡" dado, as shown in **Step 1** *above right*, and the other to fit snugly in the ‹" dado.

3 Reinstall the ‹" dado blade in your tablesaw and adjust it to cut Á" deep. Attach an extension to the miter gauge to extend it about 6" to the right of the blade. Set a stop block on the extension so it is ‹" from the blade. Cut a test notch in the end of a piece of scrap. Check the fit of the notch against the spacer you made in **Step 1**. Adjust the stop block as necessary, and cut notches in both ends of the remaining A pieces.

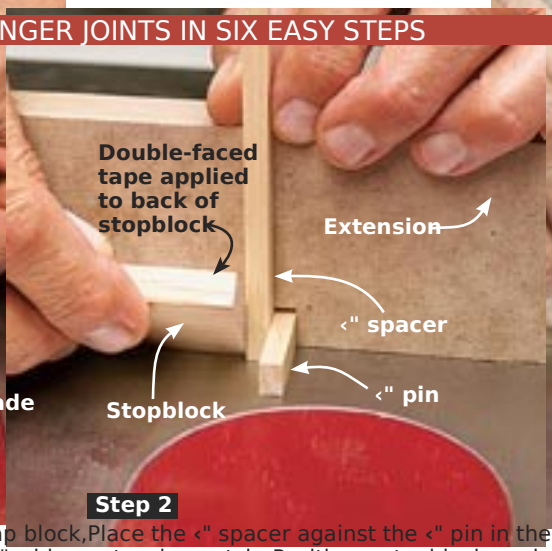
4 To cut stopped grooves in the ends (A) for the bottom (C), where shown on the drawings, first install a ‡" dado blade and adjust the depth of cut to ‹". Then set a stop block on the miter gauge extension so it is 2" from the blade. Cut a test groove in a piece of scrap. Check the fit of the bottom (C) in the groove. Adjust the stop block as necessary, and cut grooves in the inside faces of the A pieces.

To pass the extension over the blade, cut a ‹"-wide notch Á" deep. Cut a 2"-long spacer from the 12"-long ‹" spacer and insert it in the extension notch. Now adhere a stop block to the extension with double-face tape, as shown in **Step 2** *above right*, and cut a pair of notches in both ends of the ends (A), as shown in **Step 3**. Next, without changing the depth of cut, switch to a ‡" dado blade and cut notches in both ends of the sides (B), as shown in **Step 4**. Finally adhere a second stop block to the extension with double-face tape, as shown in **Step 5**; remove the first stop block; and cut the center notch in both ends of each end (A), as shown in **Step 6**.

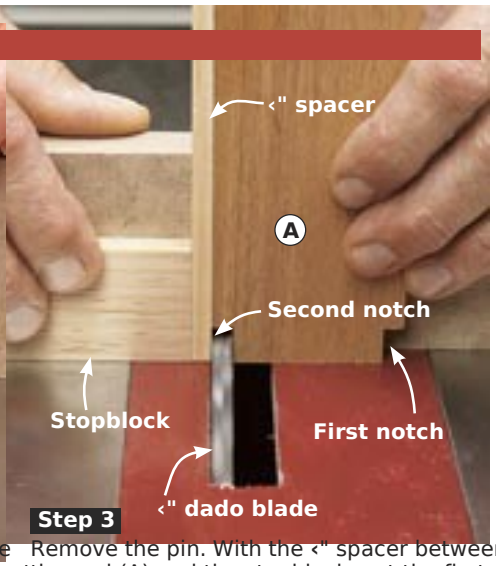
CUT ALTERNATING-WIDTH FINGER JOINTS IN SIX EASY STEPS



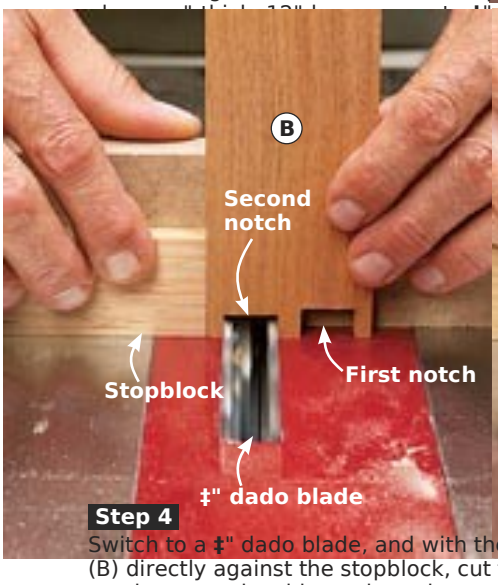
After cutting a ‡"-wide dado in a scrap block,



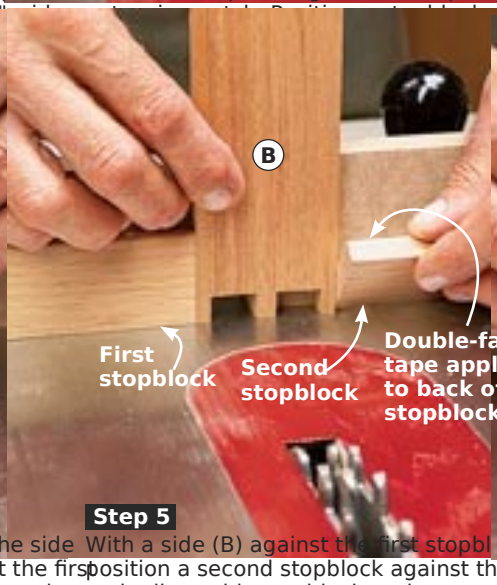
Place the ‹" spacer against the ‹" pin in the



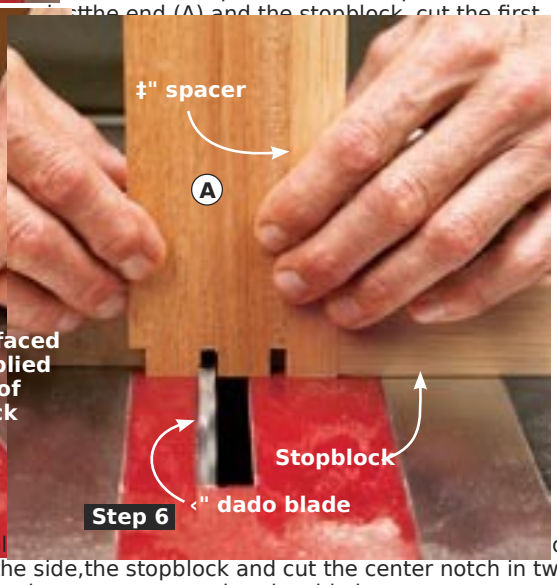
Remove the pin. With the ‹" spacer between the end (A) and the stopblock, cut the first



Switch to a ‡" dado blade, and with the side (B) directly against the stopblock, cut the first notch, rotate the side, and cut the second.



With a side (B) against the first stopbl



d position a second stopblock against the side, and adhere this stopblock to the extension.

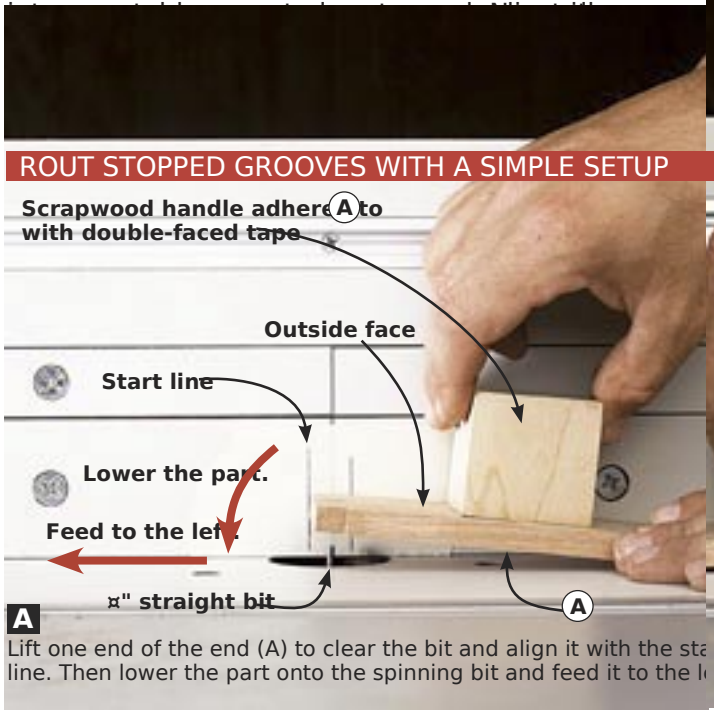
the stopblock and cut the center notch in two passes, rotating the side between passes.

Drawing 1 *page 62*, chuck a ¤" straight bit and a groov

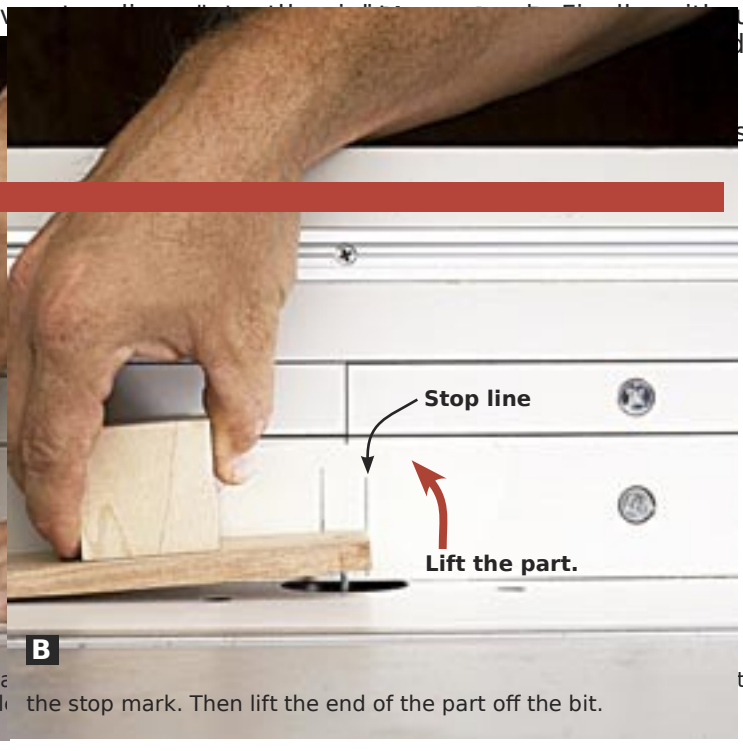
ut d groove

cut the sand it.

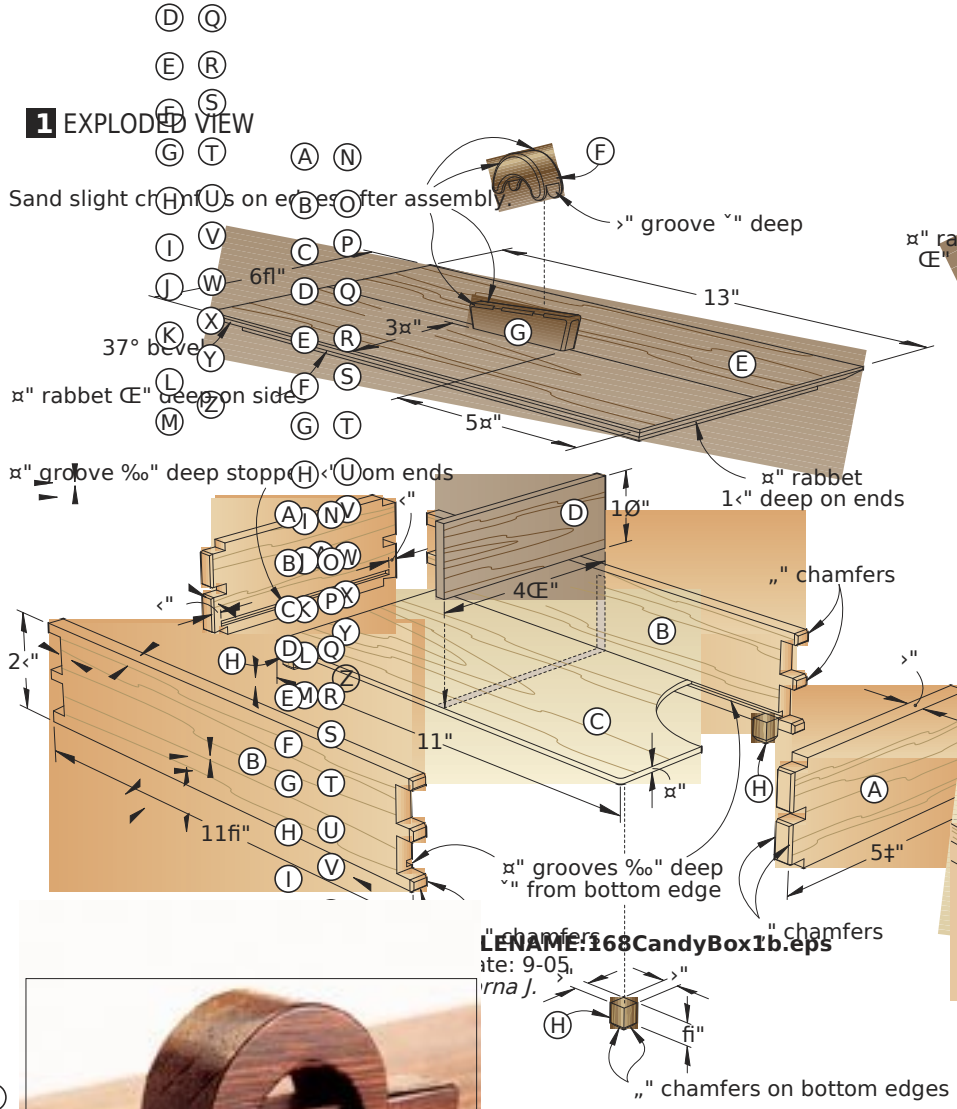
ROUT STOPPED GROOVES WITH A SIMPLE SETUP

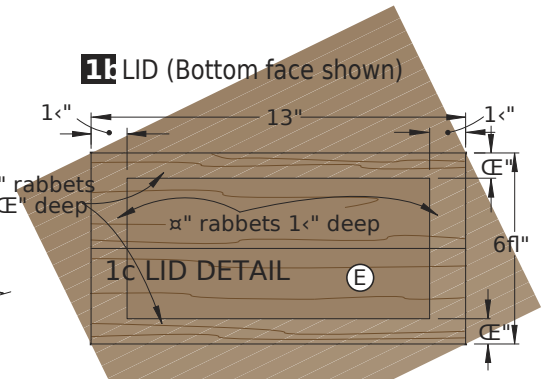


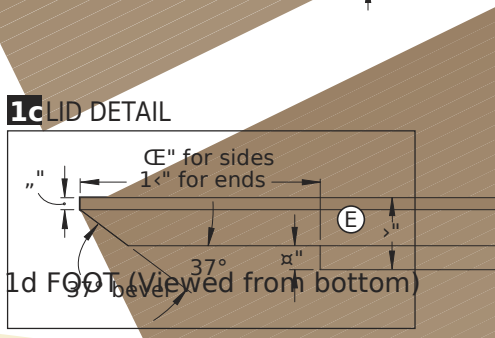
Lift one end of the end (A) to clear the bit and align it with the sta line. Then lower the part onto the spinning bit and feed it to the l

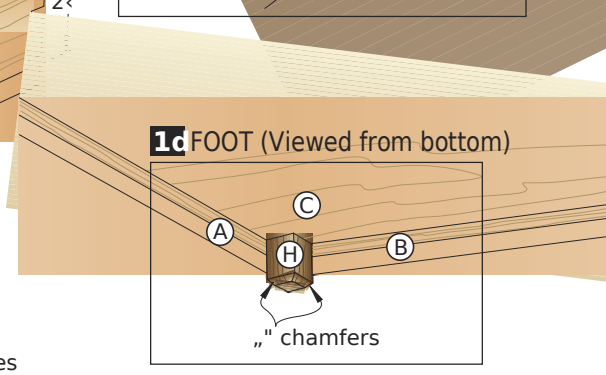


th the stop mark. Then lift the end of the part off the bit.

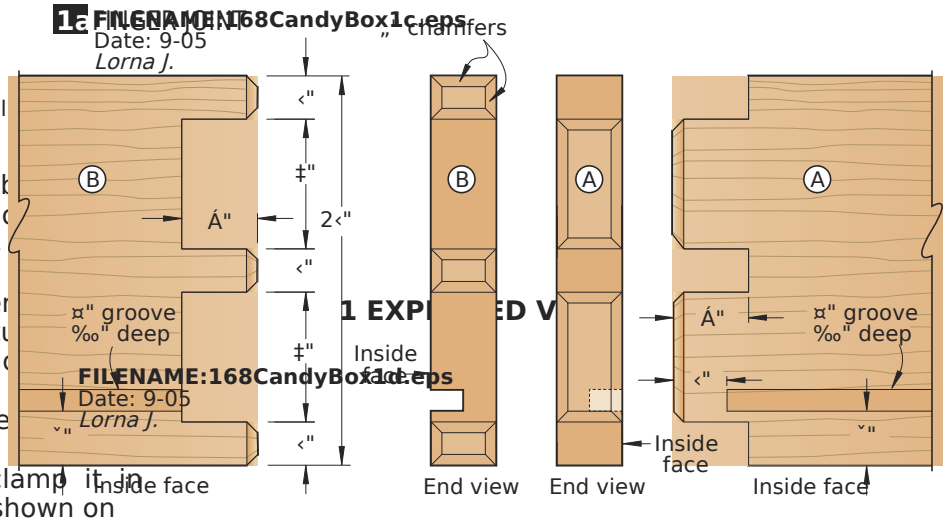








Although it looks complex, the asymmetrical handle gracing the lid is easy to make.



(You also can use ¤" tempered hardb
Then finish-sand the ends (A) and si
sanding „" chamfers on the ends
fingers, where shown in **Drawing 1a**. Spar-
ingly spread glue between the finger
the end and side grooves. Now captu
bottom in the grooves, assemble and
the box, and check it for square.

6 Plane stock to ‹" thick and cut the
(D) to size. (We used bocote.)
sand the divider, and glue and clamp it in
place, centered end-to-end, where shown on
Drawing 1.

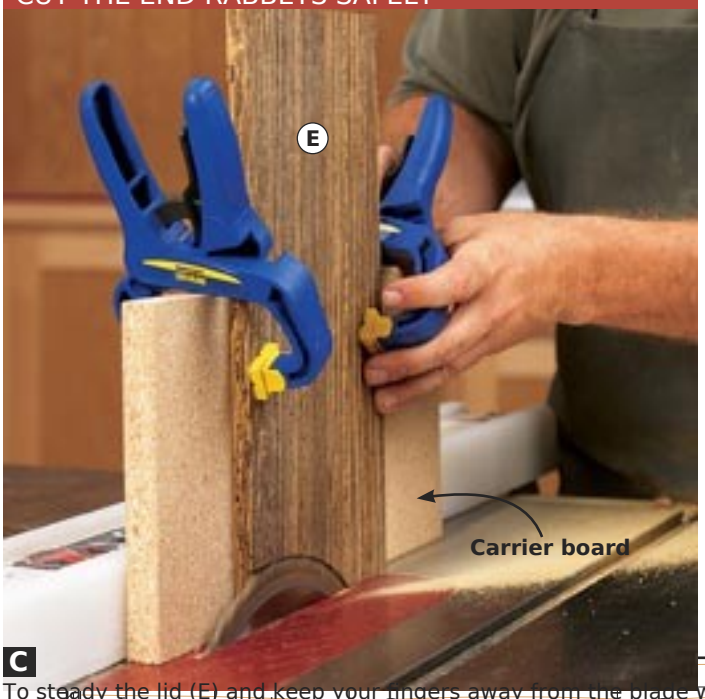
Add lid, handle, and feet

1 Resaw and plane stock to ›" thick for the
lid (E). (We used bocote.) Then edge-joi
a slightly oversize lid blank. With the saw
dry, sand the blank smooth and trim the lid to
finished size.

2 Clamp the lid (E) to a carrier board and, as shown in **Photo C**, cut ¤" rabbets 1‹" deep along the *ends* of the bottom face, where shown in **Drawing 1b**. Then reposition the lid on the carrier board, lower the saw blade, and cut ¤" rabbets Œ" deep along the *edges*. Now tilt the saw blade to 37° and again clamping the lid to the carrier board, bevel the ends and edges, where shown in **Drawing 1c**. Finish-sand the lid.

Note: *Before rabbeting the lid, measure the inside dimensions of the box. Ours measured 4fi" x 10fl". The lid rabbets shown in* **Drawing 1b** *provide ¤" of play in each direction. If your inside dimensions differ, make the necessary adjustments to the lid rabbets.*

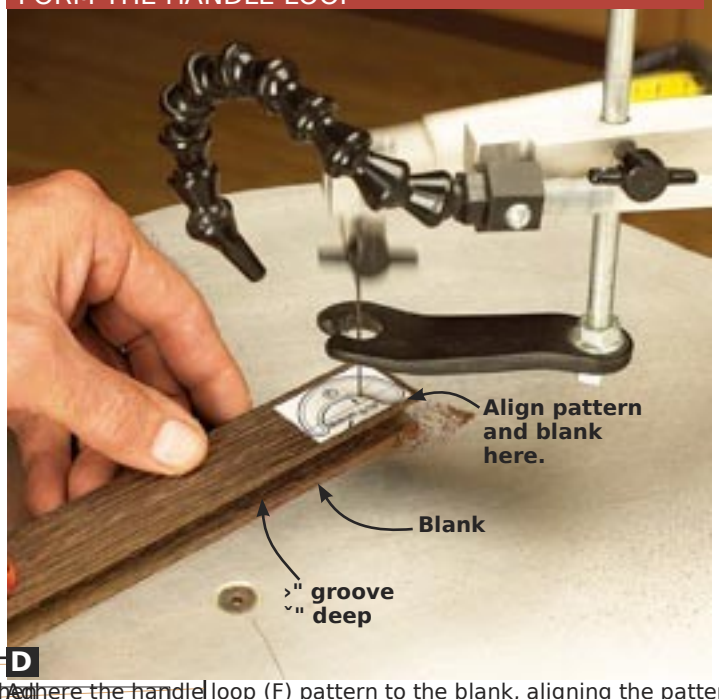
CUT THE END RABBETS SAFELY



C

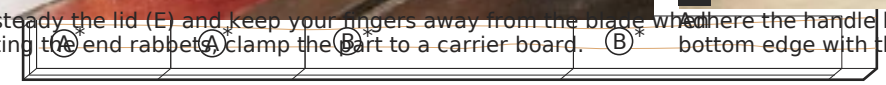
To steady the lid (E) and keep your fingers away from the blade when cutting the end rabbets, clamp the part to a carrier board.

FORM THE HANDLE LOOP



D

Adhere the handle loop (F) pattern to the blank, aligning the pattern bottom edge with the blank grooved edge. Scrollsaw the part.

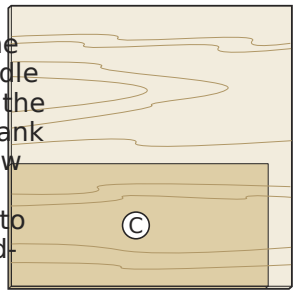


‡ x 3fi x 36" Mahogany (1 bd. ft.) *Plane or resaw to the thicknesses listed in the Materials List.

3 Cut a fl×1¤×12" blank for the handle loop (F), handle base (G), and feet (H). (We used wengé.) With a ›" dado blade in your tablesaw, cut a ˇ"-deep groove centered in one edge of the blank. Then rip the photocopy the handle pattern on the *WOOD® Pattern* insert, and cut them along the rectangular outlines. Using spray adhesive, adhere the handle loop pattern to the side of the blank at one end, and scrollsaw the handle loop to shape, as shown in **Photo D**. Sand the edges smooth.

4 Plane the remaining handle blank to ›" thick, checking it for a snug fit in the handle loop (F) groove. Adhere the handle base (G) pattern to the blank, aligning the bottom edge of the pattern with the blank edge opposite the groove. Then scrollsaw and sand the handle base to shape.

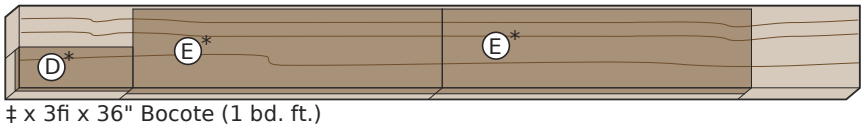
5 Glue and clamp the handle loop (F) to the handle base (G). Center the loop end-



¤ x 12 x 12" Baltic birch plywood

Cutting Diagram

‡ x 3fi x 36" Mahogany (1 bd. ft.) *Plane or resaw to the thicknesses listed in the Materials List.



‡ x 3fi x 36" Bocote (1 bd. ft.)

‡ x 1¤ x 12" Wengé

6 From the ›"-thick stock remaining from the handle base (G), rip a ›"-wide strip. Then crosscut four feet (H) to length. Chamfer the bottom edges of the base. Then center and glue the handle (F/G) on the lid (E), where indicated. Position the feet, as shown in **Drawing 1d**.

7 Sand all the parts, and finish-sand the handle (F/G) and lid (E), where necessary. Apply a clear finish. (We applied three coats of satin lacquer from a spray can, sanding with 320-grit sandpaper between coats.) Now present it to a loved one. Enjoy the reaction.

Written by **Jan Svec** with **Jeff Mertz**
Project design: **Steve Altman**, Boonton, N.J.
Illustrations: **Roxanne LeMoine; Lorna Johnson**
©Copyright Meredith Corporation 2006

Materials List

Box		FINISHED SIZE T	W	L	Matl.	Qty
A	ends	›"	2‹"	5‡"	M	2
B	sides	›"	2‹"	11fi"	M	2
C	bottom	¤"	5‹"	11"	BP	1
D	divider	‹"	1Ø"	4Œ"	B	1
Lid and handle						
E*	lid	›"	6fl"	13"	EB	1
F*	handle loop	fl"	1"	1fl"	W	1
G*	handle base	›"	‡"	3¤"	W	1
H	feet	›"	›"	fi"	W	4

*Parts initially cut oversize. See the instructions.
Materials key: M–mahogany, BP–Baltic birch plywood, B–bocote, EB–edge-joined bocote, W–wengé.
Blade and bit: Stack dado set, ¤" straight router bit.
Supplies: Double-faced tape, spray adhesive.

Source

Wood kit. Stock planed to thickness plus plywood for the parts listed *above*. Kit no. W-1 kits for ł. Heritage Building Speci scade, 7. Call 800/524-4184, or go to heritagewood.com.

E:168CandyBoxCD.eps

hand-cut dovetail

for a custom look

Cutting dovetails the old-fashioned way is more than a link to the past. Such well-made joints add a one-of-a-kind handcrafted appearance to your work.

With practice and patience, you can master the satisfying skill of hand-cutting dovetails. If your first attempt isn't perfect, don't worry. Everyone makes kindling-quality practice joints before getting the knack.

Start by gathering the essential tools, shown *page 65 top*. Practice on moderately soft wood, such as poplar, and machine your pieces to identical widths and thicknesses. (With practice, you also can dovetail b Unequal thicknesses.) Temporarily label the part faces ("front i "side inside") and edges ("top") to keep pieces in order.

We'll cut the pins first, and use those to mark the cuts for the But in some situations, it makes more sense to cut the tails firs Here's how to do that process, starting on *page 67*.

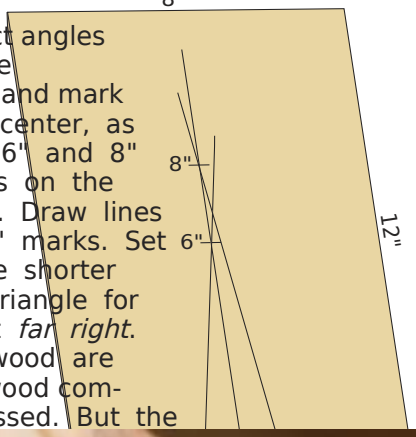
ESSENTIAL TOOLS

Tools you'll need include a mallet (A), chisels (B), a combination or try square (C), a marking gauge (D), sliding bevel (E), and fine-tooth saw (F). Not shown are a crafts or marking knife, a ruler, and pencils.

1 Set your sliding bevel

Here's a simple way to find the correct angles for the dovetails you'll make. Place a square along the straight edge of a scrap panel and mark a 90° line about 10" long down the center, as illustrated at *right*. Mark that line at 6" and 8" from the edge. Now, place two marks on the edge, 1" from the line on both sides. Draw lines from your 1" marks to the 6" and 8" marks. Set your sliding bevel to the angle of the shorter triangle for softwoods or the longer triangle for hardwoods, as shown in the photo at *far right*.

Traditionally, dovetail angles in softwood are steeper than in hardwood because softwood compresses and slips as the joint is stressed. But the difference is small: an 81° angle (a 1:



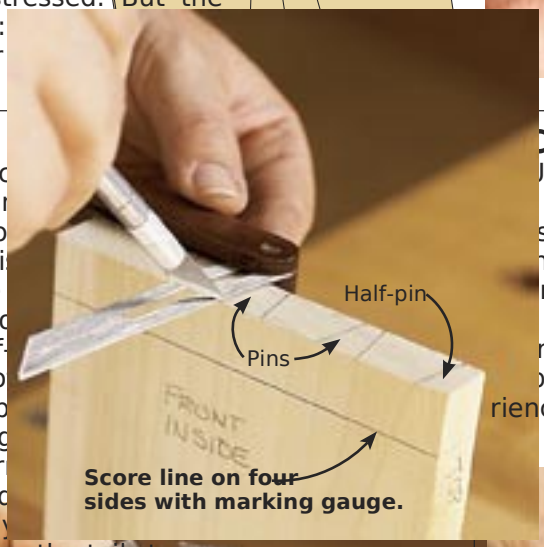
softwoods versus 83° (a 1:8 ratio) for

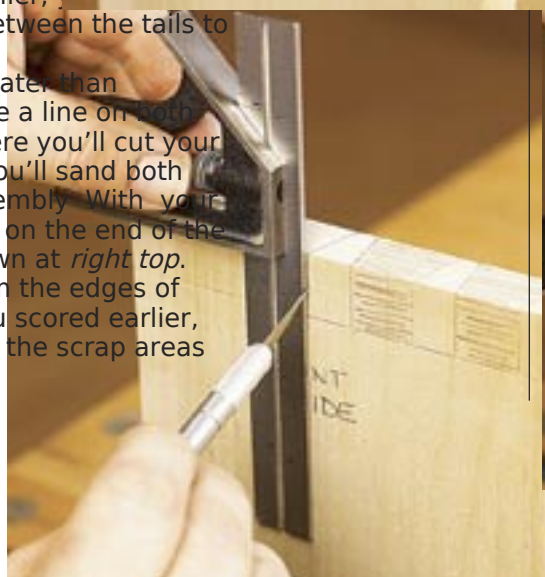
2 Mark your pin cuts

Pins always include the pieces o
part's edges and are marked at ar
ends, while tails have angled marks o
The number and position of the pins i
For evenly spaced pins, select the
pins you want between the half-pins o
Divide the space between the half-
number, and then mark the centers o
even distances along the end of the b
edge of the inside face. After deciding
you want for the pins at their nar
mark the edge of the board. Avoid
narrow side of the pins ‹" or smaller;
more working space than that between the tails to be cut later.

Using a marking gauge set to ¼" or greater than the thickness of your stock, score a line on both faces and edges of the ends where you'll cut your pins and, later, your dovetails. You'll sand both faces flush after the final assembly. With your sliding bevel set, mark your pins on the end of the board with a crafts knife, as shown at *right top*.

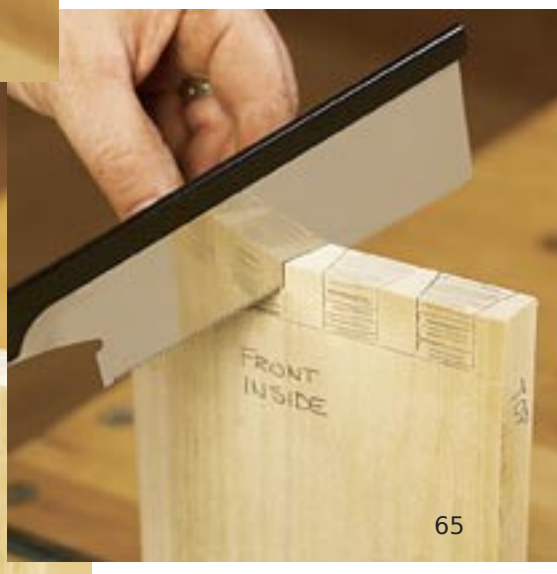
Using a square, score lines from the edges of the pin lines down to the line you scored earlier, as shown at *right bottom*. Shade the scrap areas to be removed.





Cut the pins

Use a thin-kerf saw, such as the Japanes
saw shown *below*, to cut along the sco
s to the scored marking-gauge lines
n sides. Hold your saw at 90° to the end
n, and cut slowly to prevent the grain o
wood from drawing the saw blade
rse. A small square beside your saw ca
o you maintain a true 90° angle until ex
rience allows you to visualize it unaided.



4 Chisel away the waste

Using the widest chisel that w
between the pins where they're
together, make shallow stop
scored line, as shown at *far le*
deep into the wood—¤" is dee
the first pass. Your goal is a c
line. Carefully remove the w
end, as shown at *left*, with ligh
chisel. Make another set of st
the waste, and repeat these
you're about halfway through
of the board. Creating small V
the waste pop out as you

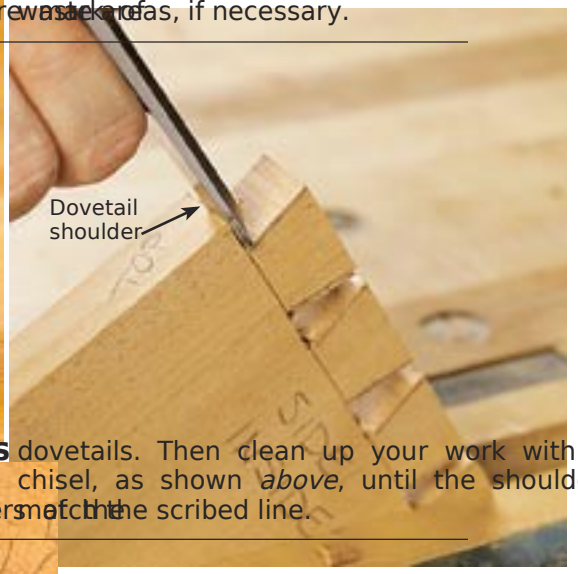
ove. Flip
repeat th

5 Clean between the pins

Clean the area between the pins with a chisel. To make the joint easier to assemble, create a slight concave in the end grain between the pins below the faces of the board, as shown *above*. Your pins are now ready; don't alter them after you begin cutting the dovetails.

6 Mark the dovetail locations

The pins serve as your pattern for laying out the dovetails. Hold the front board vertical, and place it on the inside face of your other board at the end. Line up the inside edges of the pins on the score lines of the other board. Mark the dovetails using a craft knife, as shown *above left*. Once those are clearly scored, use a square and a knife to mark your 90° saw lines along the end of the board, as shown *above right*. Darken the waste areas, if necessary.



7 Carefully saw the dove

Saw the dovetails at an ang
above. Unlike the other piece w
directly on the scored line, saw
side to give yourself a marg
fine-tuning the joint.

8 Cut and trim the shoulders

Cutting on the waste side, as shown *above left*, saw away the shoulders of the dovetails. Then clean up your work with a chisel, as shown *above*, until the shoulde match the scribed line.

9 Cut between the dovetails

This step resembles cleaning between the pins, except that you'll cut on the waste side up to your score lines to fine tune the joint. You can see at *left* why w cautioned you against making your pins too narrow at their tips: Narrow pins make it har to work a chisel between the dovetails.

10 Fine-tune the dovetails

Working slowly and precisely, use your chisel to remove waste almost to the lines you scored with your crafts knife. Begin test-fitting your joint as you work, as shown at *right*. Remove tiny amounts of waste from the dovetail with each fitting until the joint squeezes together with light mallet taps. Avoid flattering the pins. This can be time-consuming until you gain experience, but it makes the difference between a joint you'll admire and one you'll patch.

how to cut tails-first dovetails

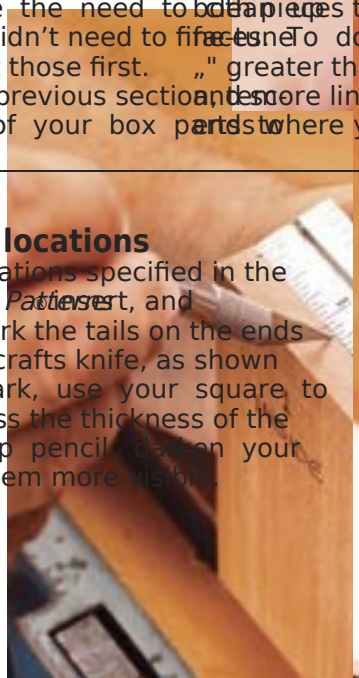
When making the keepsake box shown *above* and featured on *page 60*, you'll want to reverse the procedure shown earlier and cut the tails first. Why? You'll likely have too little space between the tails to squeeze in a chisel to clean up your cuts, as shown in **Step 9**. By marking the tails first and sawing to your marks, you eliminate the need to clean up the tails, just as you didn't need to fine-tune the pins when you cut those first.

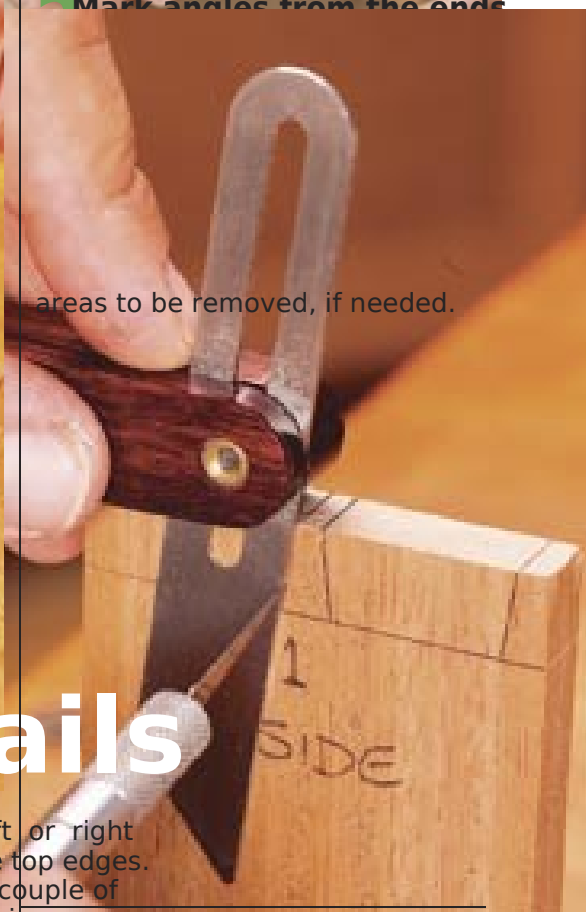
As explained in the previous section, temporarily mark each of your box parts to identify the front, back, and left or right sides; the inside surfaces; and the top edges. While preparing your stock, cut a couple of tail parts and save any remaining scraps for practice. You'll use the same tools as before, but a ¤" bevel-edge chisel will help you reach between the tails.

The design of this box calls for the ends to extend about „" proud of the front and back pieces. To do this, set your marking gauge „" greater than the thickness of your stock and score lines on the faces and edges to indicate where you'll cut your pins and tails.

1 Lay out the tail locations

Refer to the tail locations specified in the pattern on the *WOOD Patterns* insert, and then measure and mark the tails on the ends of your stock using a crafts knife, as shown at *right*. At each mark, use your square to extend the mark across the thickness of the ends. Using a fine-tip pencil, darken your score lines to make them more visible.





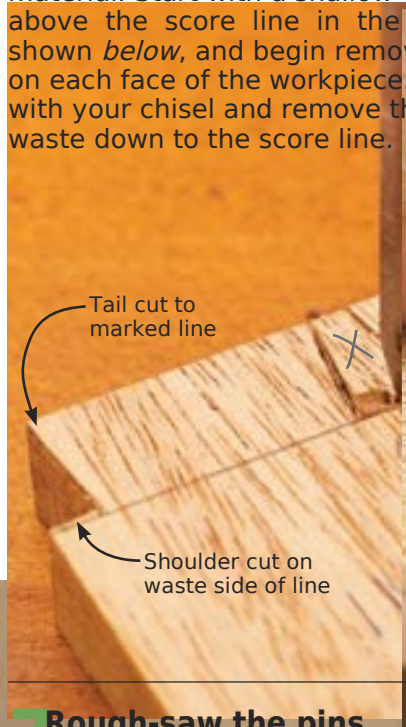
areas to be removed, if needed.

3 Saw the tails

Rest the tip of your thumb against the smooth blade of your saw for support, as shown *below*, and carefully saw along the angled tail marks down to the score lines on the faces. Note the tight working space—there's less than ¤" between the wide end of the tails. Next, cut on the waste side of your score line to remove the shoulder. You'll remove the rest with your chisel for a clean, precise line.

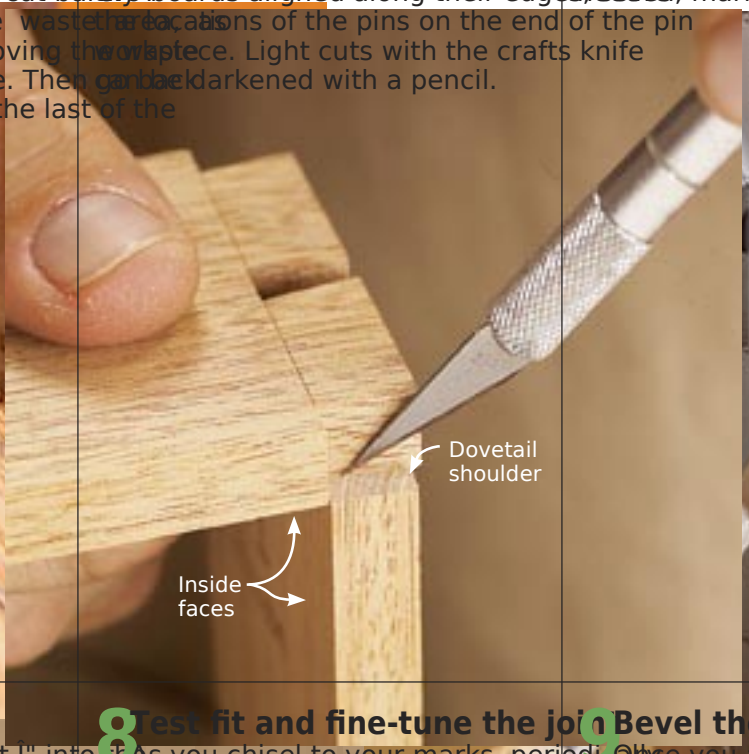
4 Clean between the tails

Here's where you'll need a ¤" bevel-edge chisel, although you can remove the waste using a ‹" chisel close to the score line and the tip of a crafts knife inserted between the tails to pry loose the waste material. Start with a shallow cut barely above the score line in the waste area, as shown *below*, and begin removing the waste on each face of the workpiece. Then go back with your chisel and remove the last of the waste down to the score line.



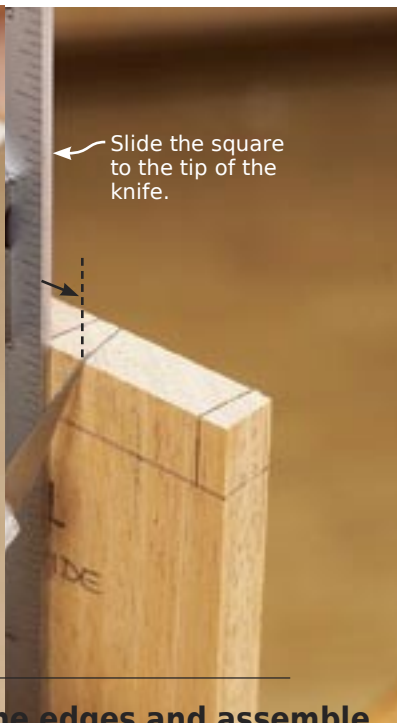
5 Use tails to mark pin cuts

Edge the tail piece so that the inside faces the waste. Clamp the pin piece in a vise so the inside faces the inside of the tail piece, as shown *below*. With the shoulder resting along the inside face of the pin piece and the two boards aligned along their edges, scribe the locations of the pins on the end of the pin workpiece. Light cuts with the crafts knife can be darkened with a pencil.



6 Mark the pin locations

Place the tip of your crafts knife at the edge of your end grain score marks and slide your square against the knife, as shown *below*. Then extend the pin lines down to the scribed line. Repeat on the other face. Next, mark the waste areas to be removed.



7 Rough-saw the pins

Place your saw blade about ĵ" into the waste side of your line and cut to the score line, as shown *below*. Chisel away waste between the pins using the same technique from **Steps 4** and **5** of the previous section. Then use your chisel to shave away the remaining waste on the edges of the pins, bringing them down to your scored line as shown in **Step 9** of the previous section. Avoid cutting beyond your score lines.

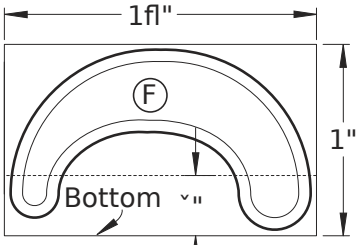
8 Test fit and fine-tune the joint

As you chisel to your marks, periodically test-fit the joint to see which areas need work, as shown *below*. Trim any pins that need it. The joint should go together with gentle taps from the bottom of the mallet handle. Aim for a consistent wood-to-wood fit between the pieces, not one that has to be hammered together.

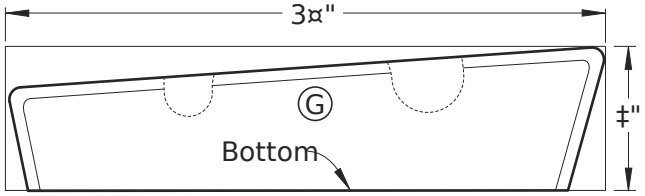
9 Bevel the edges and assemble

Only once you assemble the joint, use 150-grit sandpaper on a hard sanding block to create a 45˚ chamfer on the ends of the dovetails and pins, as shown *below*. Sand carefully to create a consistent angle. Then sand the faces, ends, and edges up to 180 grit before finishing and assembling the joints.

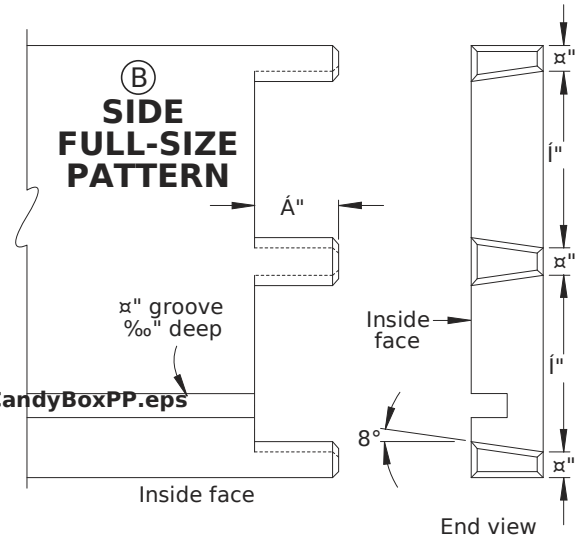
Written by **Bob Wilson** with **Jeff Mertz**

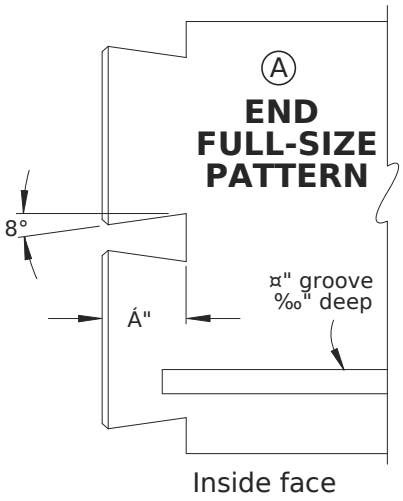


HANDLE LOOP
FULL-SIZE PATTERN



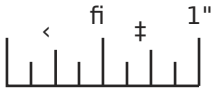
HANDLE BASE
FULL-SIZE PATTERN





FILENAME:168CandyBoxPP.eps
Date: 9-05
Lorna J.

To ensure full-size patterns are correct size, your printer should be set to print at 100% (not fit to page). Measure full-size patterns to verify size.



FILENAME:168DovetailMissed.eps
Date: 1-06
Lorna J.

Visit the WOOD® family of helpful Web sites!

WOODStore.net

Browse more than 1,300 woodworking project plans, DVDs, back-issue collections, videos, tool reviews, book

Plans

"Complete Guide" DVD-ROM's

Videos

Back-Issue Collections

WOODmagazine.com/videos

DVDs or downloads

The biggest names in woodworking help you build your skills with affordable videos (up to 2 hours long Save money by doing the download.

FREE magazine support 24/7

WOODcuts

WOOD magazine editors provide videos that enhance the content in the magazine. New videos added regularly.

By woodworkers, for woodworkers

WOOD tube

Watch free videos of other woodworkers showing their stuff, from shop tips, to favorite jigs, to... well, just about anything!

Watch a demo before you buy

TOOL SCHOOL

Don't spend a penny on a tool until you learn how it works. Tool School is like having a free woodworking show on your desktop!

WOODmagazine.com

A wealth of information just a click away.

WOODmagazine.com speaks to woodworkers of all skill levels with free woodworking plans, helpful forums, hundreds of articles, and more services to help you become better woodworke

toolreviews.woodmagazine.com

Everybody's a tool critic. Now it's your turn!

Readers rely on *WOOD* magazine for unbiased reviews of woodworking tools and accessories. You'll find them her all in one place. Wh you're there, add reviews about the tools in your shop. Just click to compar specs, prices, and more.